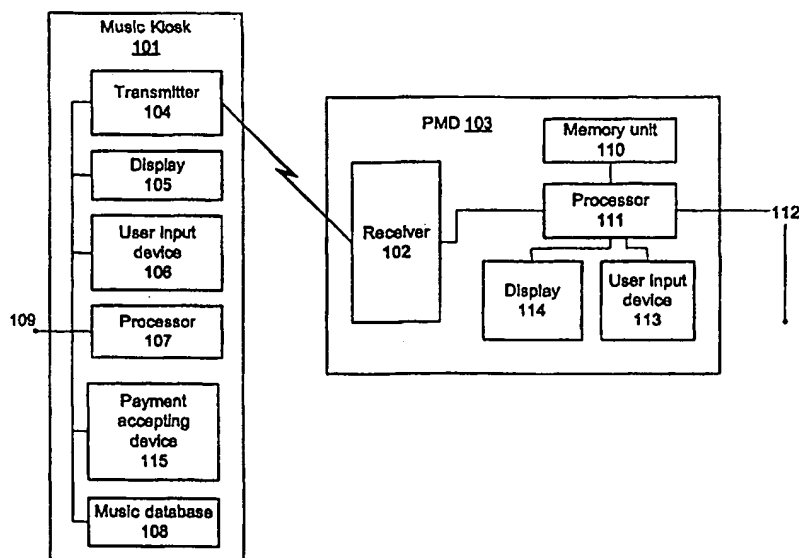




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US99/20789 (22) International Filing Date: 14 September 1999 (14.09.99) (30) Priority Data: 09/190,259 13 November 1998 (13.11.98) US (71) Applicant: SONY ELECTRONICS INC. [US/US]; 1 Sony Drive, Park Ridge, NJ 07656 (US). (72) Inventors: GIOSCIA, Richard; 38 Winding Trail, Mahwah, NJ 07430 (US). SONODA, Yumi; 1022 South Springer Road, Los Altos, CA 94024 (US). ZOELS, Jan-Christoph; 33 Flatbush Avenue, Brooklyn, NY 11217 (US). (74) Agent: KANANEN, Ronald, P.; Rader, Fishman & Grauer PLLC, Suite 501, 1233 20th Street, NW, Washington, DC 20036 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SI, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NI, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: METHOD AND APPARATUS FOR COMMERCIAL DISTRIBUTION AND PERFORMANCE OF RECORDED MUSIC

**(57) Abstract**

A network of kiosks (101) each contain a database (108) of digital music recordings. Using a display device (105) and a user input device (106) on each kiosk (101), a purchaser can see a listing of the music recordings available in the database (108) and select a recording to be downloaded. The selected recording is transmitted, preferably wirelessly, to a personal music device (103) worn on the wrist or clipped to the clothing of the purchaser. The purchaser pays for the recording. The personal music device (103) can then immediately retrieve and play the recording, preferably through headphones connected (112) to the personal music device (103).

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TITLE OF THE INVENTION

Method and Apparatus for Commercial Distribution and
5 Performance of Recorded Music

FIELD OF THE INVENTION

The present invention relates to the field of commercial music sales and distribution. The present
10 invention also relates to personal music devices for storing and playing recorded music. More specifically, the present invention relates to a system of publicly available terminals or kiosks that can download digital music recordings into personal music devices for storage
15 and performance.

BACKGROUND OF THE INVENTION

Traditionally, music is commercially distributed through a relatively narrow trade channel. Once the
20 music is recorded, it is distributed to radio stations. The radio stations then broadcast the music publicly. In this way, the radio station's broadcast has a content that will draw listeners and, therefore, advertising revenue.

25 Additionally, the music broadcast by the radio station becomes known to the public. Those who particularly enjoy the music will then seek to purchase a recording of it.

Recordings of musical works are typically sold in
30 retail stores or, alternatively, through catalogs and mail orders. The music is recorded on a physical data storage device such as a digital compact disc (CD) or a cassette tape. The disc or tape with the recordings desired by a purchaser is identified or selected at a
35 retail outlet and purchased.

After an interested listener has purchased the recording, that listener can hear a performance of the

music anytime it is desired by playing the disc or tape on a disc or tape player. Disc players are now frequently provided in automobiles and computers.

5 Additionally, disc players may be part of a large home stereo system or a portable personal stereo device.

Historically, music stores and mail order services were the sole methods for the commercial distribution and sale of musical recordings. However, with the advent of the compact disc and digital recording, the data
10 composing a musical recording is no different from any other digital data and can be copied and transmitted electronically, for example, over phone lines and computer networks such as the internet.

With this advance, a purchaser can preview or listen
15 to musical recordings with a computer. It is even possible to download music from the internet which is then performed as a live bit-stream or stored and played by the listener's computer on command. If the listener has, for example, a writeable CD drive connected to his
20 or her computer, the downloaded music may be optically recorded on a blank compact disc that can then be used as any other compact disc purchased from a retail outlet.

While music can be distributed and even sold over a computer network such as the internet, such a system
25 still requires that the purchaser use his or her computer to connect to the network to access and download musical recordings. This necessarily limits the distribution of music electronically. There are many instances in which a listener, who is away from his or her computer and
30 internet connection, may wish to obtain a musical recording for immediate performance.

Consequently, there is a need in the art for a method and apparatus that takes advantage of the ability to transmit and copy music digitally to make music more
35 widely and easily distributed without requiring a user to visit a music store or connect via computer from home or office to the internet or other computer network.

SUMMARY OF THE INVENTION

Consequently, it is an object of the present invention to meet the above-described needs and others.

5 Specifically, it is an object of the present invention to provide a method and system in which music recordings can be downloaded from publicly available terminals into personal music devices for immediate storage and performance.

10 Additional objects, advantages and novel features of the invention will be set forth in the description which follows or may be learned by those skilled in the art through reading these materials or practicing the invention. The objects and advantages of the invention
15 may be achieved through the means recited in the attached claims.

To achieve the stated and other objects, the present invention may be embodied and described as a method of commercially distributing musical recordings by
20 downloading a digital recording of music from a kiosk to a self-contained personal music device which stores the recording in an electronic memory and can play the music recording. Preferably, the downloading is accomplished wirelessly.

25 The method of the present invention may also include the steps of reviewing a listing of the music recordings which are available for download on a display of the kiosk; and selecting a music recording for download from the listing. The selection is performed with a user
30 input device on the kiosk. The downloading of the music recording is initiated in response to the selecting of the recording by the purchaser.

Additionally, the method of the present invention may include receiving payment for the downloading of the
35 music recording. Once the download to the personal music device is completed, the method may include retrieving the music recording from the electronic memory; and

transducing the music recording into audible sound with the personal music device.

For carrying out the forgoing method, the present invention also encompasses a self-contained personal
5 music device having a receiver for receiving a download of a digital music recording; an electronic memory unit for storing the digital music recording; and a processor for accessing the recording in the memory unit and outputting an audio signal which can be transduced into
10 audible sound.

Preferably, the receiver is a wireless receiver for receiving the download of a digital music recording wirelessly. The personal music device of the present invention also preferably includes a port for receiving a
15 jack of a pair of headphones, the audio signal being output through the port.

The personal music device is preferably worn by the user. For example, the personal music device of the present invention may include a wristband and may be
20 sized to be worn on a human wrist. Alternatively, the personal music device of the present invention may include a clip for clipping the device to a user's clothing.

The personal music device of the present invention
25 may also include a user input device with which a user can control the processor to selectively access or process music recordings in the memory unit. To monitor the processor and the instructions in put with the user input device, the personal music device of the present
30 invention may include a display device.

The present invention also encompasses a kiosk for dispensing digital music recordings to personal music devices. The kiosk may include a music database containing at least one digital music recording; and a
35 transmitter for transmitting a digital music recording from the database. Preferably, the transmitter is a

wireless transmitter for wirelessly transmitting the music recording to the personal music device.

The kiosk of the present invention also preferably includes a payment receiving device for receiving payment
5 for transmitting the digital music recording. A display device of the kiosk is driven by a processor. The processor may provide a listing of the music recordings in the database on the display device. A user input device connected to the processor allows a user to
10 control the displayed listing of music recordings and to select a music recording from the listing to be transmitted by the transmitter.

Preferably the kiosk of the present invention also includes an external connection through which music
15 recordings can be remotely added to or deleted from the database. Moreover, the kiosk of the present invention is preferably one of a network of kiosks which are provided in publicly accessible locations where people frequently listen to music through personal music
20 devices.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate the present invention and are a part of the specification. Together
25 with the following description, the drawings demonstrate and explain the principles of the present invention.

Fig. 1 is block diagram of a music kiosk and personal music device ("PMD") of the present invention.

Fig. 2 is a diagram of a first embodiment of the
30 personal music device according to the present invention.

Fig. 3 is a diagram of a second embodiment of the personal music device according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

35 The present invention may be embodied in a system of publicly available terminals or kiosks at which a user may purchase and download a digital musical recording.

The recording is preferably stored in a compact, personal music playing device that is portable and can be used to perform the downloaded music immediately, preferably with the use of headphones.

5 Such kiosks can be fully automated like a conventional vending machine and can, therefore, be widely placed in those areas where people frequently listen to music, particularly with personal stereo systems. For this discussion, personal stereo systems
10 are, for example, compact tape or disc players that include headphones through which the user listens to the music.

For example, a music kiosk according to the present invention could be provided in a fitness or health club
15 where patrons typically listen to music with personal stereo systems while exercising. Patrons of such a club may frequently wish to obtain a new recording to listen to during a workout. Additionally, a music kiosk according to the present invention could be provided at
20 recreational facilities such as ski resorts, beaches, spas, public parks, amusement parks, etc. where patrons may be listening to music with personal stereo systems.

A music kiosk according to the present invention may also be placed in transportation systems such as airports
25 and train or bus terminals. Music kiosks according to the present invention may even be placed on vehicles such as airplanes, trains, ships, etc. In short, anywhere people might want to listen to music through a personal stereo system.

30 A music kiosk or terminal 101 of the present invention is illustrated in Fig. 1. The kiosk 101 includes, for example, a processor 107 that drives a display device 105. The processor is controlled with a user input device 106. The display 105 and input device
35 106 are used by someone wishing to identify a musical selection that he or she wishes to purchase. By operating the input device 106, the user may scroll

through a listing of the music available through the kiosk 101. This listing is displayed on the display 105. The user also uses the input device 106 to select or indicate the music he or she wishes to purchase.

5 The user input device 106 may be any of a number of equivalent devices. For example, the user input device 106 may be an alphanumeric keyboard, a trackball with a selection button, a joystick with a selection button, etc. Any device which can be used by the user to
10 navigate through a listing of musical works on the display 105 and indicate a selection from among the listings would be considered an equivalent user input device for purposes of the present invention.

 Similarly, the display device 105 may be any device
15 on which a listing of the music available can be displayed. Examples include a liquid crystal display (LCD), an electro-luminescent or FED display or a cathode ray tube (CRT). The listing of the music may be printed or displayed text, pictures or icons representing the
20 music available, or a combination of the two.

 Once music has been selected for download, the purchaser may then insert cash or a credit card to pay for the music. The payment accepting device 115 can be made to accept cash, credit cards or both.
25 Alternatively, the user may input a subscription or billing identification and be billed later for the music being downloaded.

 When a selection has been made and paid for, the selected music is downloaded from the kiosk into a
30 personal music device of the present invention. The personal music device ("PMD") of the present invention is preferably very compact so as to be easy to carry and use in virtually any location.

 As shown in Fig. 1, the PMD 103 of the present
35 invention includes a receiver 102 for receiving the download of a musical recording from the kiosk. The kiosk will transmit the music being downloaded

electronically with a transmitter 104. Once the music is received, the PDM stores the recording in a digital memory unit 110.

5 The transmitter 104 of the kiosk 101 and the receiver 102 of the PMD may be any of a number of equivalent electronic communication devices under the principles of the present invention. For example, the receiver 102 may include a terminal or port to which a wire from the transmitter 104 of the kiosk 101 may be
10 connected. The music may then be downloaded from the kiosk 101 to the PMD 103 over the wireline connection.

Alternatively and preferably, the connection between the transmitter 104 and the receiver 102 is wireless. For example, the transmitter 104 may be a light source,
15 and receiver 102 may be a light detector, e.g. infrared. Alternatively, the transmitter 104 may be an acoustic signaler, and receiver 102 may be an acoustic receiver, e.g. ultrasonic. Finally, transmitter 104 and receiver 102 may both be a radio antenna for wireless transmitting
20 musical recordings with a radio frequency signal.

A processor 111 of the PMD 101, which is controlled by a user input device 113, accesses the music in memory 110 to perform the recording. Preferably, the user input device 113 is a keypad with buttons for retrieving and
25 playing music, moving fast forward or in reverse through a musical piece, skipping between musical tracks, adjusting volume, etc. In addition to a keypad, any other user input device capable of giving similar commands to the processor 111 would be equivalent in the
30 present invention.

A display 114 may also be provided on the PMD 103. The display device 114 would preferably be an LCD on which may be displayed information such as a designation of the musical recording being performed or the action
35 being taken, e.g. fast forward, track skipping, etc.

While the PMD 103 might include a speaker for performance of the musical recordings, due to the size

constraints of the PMD, a speaker producing music of sufficient quality and volume would be difficult to provide. Therefore, the PMD 103 preferably includes a jack or terminal 112 to which headphones (not shown) may
5 be connected. With headphones connected to the processor 111, the music recordings in memory unit 110 can be transduced into high quality, audible music.

As shown in Figs. 2 and 3, the PMD of the present invention may be embodied in a number of different
10 devices. For example, as shown in Fig. 2, the PMD of the present invention includes a clip 201 with which it can be clipped to a belt or other clothing of the wearer. As will be appreciated by those skilled in the art, many equivalent clip designs and configurations could
15 equivalently be used to accomplish the present invention.

A jack 202 is also provided to which headphones (not shown) may be connected.

Alternatively, as shown in Fig. 3, the PMD may include a wristband so as to be worn like a wristwatch.
20 The PMD may also be provided on an armband. A jack 202 is also provided to which headphones (not shown) may be connected to the PMD 103. Alternatively, wireless headphones may be used.

The music available at the kiosks of the present
25 invention may be provided to the kiosks in a number of ways under the principles of the present invention. For example, the kiosks may be visited and regularly serviced to provide new or additional musical recordings for patrons.

30 Alternatively, as shown in Fig. 1, the kiosks may have a connection 109 which is a dedicated cable network, a wireless local or long-distance telephone service or a connection to public phones lines with which the kiosk 101 can communicate with a central facility (not shown).

35 Over this connection 109, the central facility can periodically and electronically communicate with the kiosk 101 to update the music available. The music

available from the kiosk 101 is stored in a music database 108.

While the present invention has been described as a method and device for distributing musical works, the present invention may also be used to distribute other audio files. For example, the present invention may be employed as described above to distribute or vend audio news clips describing current events, audio books, or any other audio recording. The only constraints on the size of the audio files distributed are the size of the memory in the personal music device and the time required to download the audio file.

The preceding description has been presented only to illustrate and describe the invention. It is not intended to be exhaustive or to limit the invention to any precise form disclosed. Many modifications and variations are possible in light of the above teaching.

The preferred embodiment was chosen and described in order to best explain the principles of the invention and its practical application. The preceding description is intended to enable others skilled in the art to best utilize the invention in various embodiments and with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims.

WHAT IS CLAIMED IS:

1. A method of commercially distributing musical
5 recordings comprising downloading a digital recording of music from a kiosk (101) to a self-contained personal music device (103) which stores the recording in an electronic memory (110) and can play the music recording.

10

2. A method as claimed in claim 1, wherein said downloading comprises wirelessly downloading said digital recording of music.

15

3. A method as claimed in claim 1, further comprising:

reviewing a listing of music recordings which are available for download on a display (105) of said kiosk (101); and

20

selecting a music recording for download from said listing, said selecting being performed with a user input device (106) on said kiosk (101);

wherein said downloading is initiated in response to said selecting.

25

4. A method as claimed in claim 1, further comprising receiving payment (115) for said downloading of said music recording.

30

5. A method as claimed in claim 1, further comprising:

retrieving said music recording from said electronic memory (110); and

transducing said music recording into audible sound
35 with said personal music device (103).

6. A self-contained personal music device comprising,

a receiver (102) for receiving a download of a digital music recording;

5 an electronic memory unit (110) for storing said digital music recording; and

a processor (111) for accessing said recording in said memory unit (110) and outputting an audio signal which can be transduced into audible sound.

10

7. A device as claimed in claim 6, wherein said receiver (102) is a wireless receiver for receiving said download of a digital music recording wirelessly.

15 8. A device as claimed in claim 6, further comprising a port (112) for receiving a jack of a pair of headphones, said audio signal being output through said port (112).

20 9. A device as claimed in claim 6, wherein said personal music device (103) further comprises a wristband (301), said personal music device (103) being sized to be worn on a human wrist.

25 10. A device as claimed in claim 6, wherein said personal music device (103) further comprises a clip (201) for clipping said device to a user's clothing.

30 11. A device as claimed in claim 6, further comprising a user input device (113) with which a user can control said processor (111) to selectively access or process music recordings in said memory unit (110).

35 12. A device as claimed in claim 6, further comprising a display device (114).

13. At least one kiosk (101) for dispensing digital music recordings to personal music devices (103), said at least one kiosk (101) comprising:

5 a music database (108) containing at least one digital music recording; and
a transmitter (104) for transmitting a digital music recording from said database (108).

10 14. A kiosk as claimed in claim 13, wherein said transmitter (104) is a wireless transmitter for wirelessly transmitting said music recording to said personal music device (103).

15 15. A kiosk as claimed in claim 13, further comprising a payment receiving device (115) for receiving payment for transmitting said digital music recording.

20 16. A kiosk as claimed in claim 13, further comprising a display device (105) driven by a processor (107), wherein said processor (107) displays a listing of the music recordings in said database (108) on said display device (105).

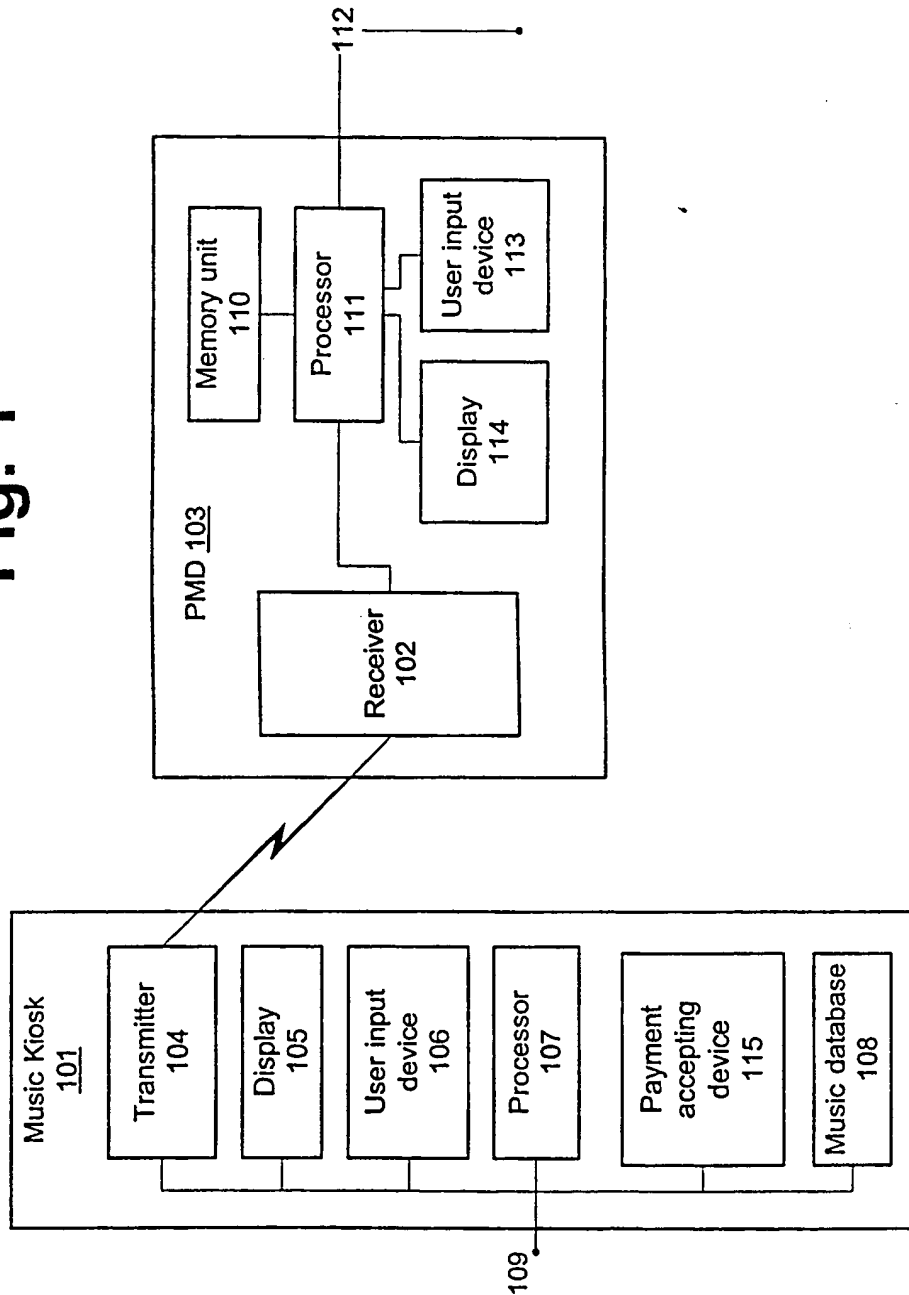
25 17. A kiosk as claimed in claim 16, further comprising a user input device (106) connected to said processor (107), wherein said user input device (106) can be used to control said displayed listing of music recordings and to select a music recording from said listing to be transmitted by said transmitter (104).

30 18. A kiosk as claimed in claim 13, further comprising an external connection (109) through which music recordings can be remotely added to or deleted from said database (108).

35 19. A kiosk as claimed in claim 13, wherein said at least one kiosk (101) comprises a plurality of kiosks.



Fig. 1



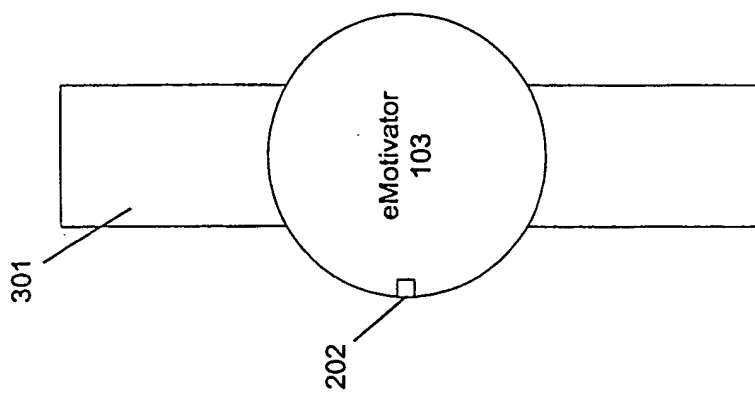


Fig. 3

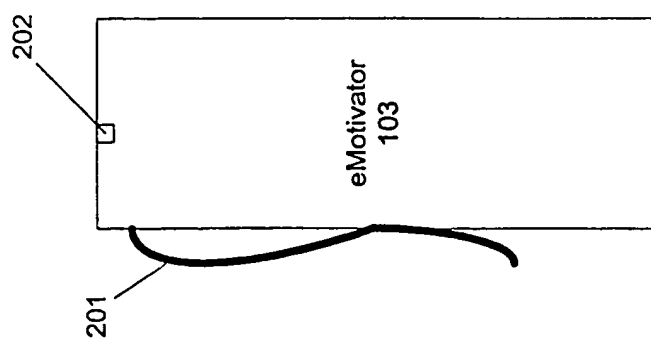


Fig. 2

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 99/20789

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G11C7/16 G07F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04H G07F G11C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	column 4, line 47 -column 5, line 5	9, 10, 13-19
A	column 6, line 1 - line 20 column 6, line 57 -column 7, line 16 column 7, line 40 -column 8, line 34 figures 1,4,7,11 ---	1-3,5, 11,12
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☒ Further documents are listed in the continuation of box C☒ Patent family members are listed in annex

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Date of the actual completion of the international search

14 January 2000

Date of mailing of the international search report

24/01/2000

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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